REMARKS/ARGUMENTS

Claims 1-6, 8-12, 14, 15, and 26 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Baines, Musow, and on Applicants' alleged admissions on page 5 of the specification, which are based on a discussion of FI Patent No. 66,662. Reconsideration by the Examiner and withdrawal of this rejection are respectfully requested.

In order to establish a *prima facie* case of obviousness, three basic criteria must be met: 1) the reference(s) must teach or suggest all the claim limitations 2) there must be some suggestion to modify the references; and 3) there must be some reasonable expectation of success. The Office has failed to establish a *prima facie* case of obviousness because the Examiner has failed to establish any of the above criteria. Therefore the rejections should be withdrawn.

As discussed in Applicants' prior response, the combination of the references fails to disclose each and every limitation of independent Claims 1 and 26. First, the references do not disclose or suggest controlling the density of the green liquor by the addition of weak white liquor before the green liquor is fed into the slaker. Instead, Musow teaches adding weak wash to the dissolving tank, the '662 patent and Baines both teach adding lime to the slaker.

The Examiner asserts that this is not persuasive because it is not found in the claims or the specification. Contrary to the Examiner's assertions, the claims clearly support that the white liquor is added to the green liquor before the slaker. In particular, independent Claim 1 recites "controlling the density of the green liquor being fed to the slaker [by] controlling an amount of weak white liquor added to the green liquor", i.e., the density of the green liquor is controlled before it is added to the slaker so that means that the white liquor is added before the slaker. Independent Claim 26 recites "adjusting the density of said green liquor inlet stream by introducing an effective amount of a white liquor stream into said green liquor inlet stream." In other words, the white liquor is added to the green liquor before the inlet to the slaker. Thus, the claims make clear that the white liquor is added upstream of the slaker. This is also clear in the specification of the present application. For example, FIG. 1 clearly illustrates the white liquor being added to the green liquor upstream of the slaker **4**.

Second, the combination of the references fails to disclose or suggest a process that includes measuring the density and TTA of the green liquor to determine a desired density for the green liquor. Nor do any of the references disclose or suggest the formula determining the density of the green liquor as recited in Claims 11 and 26.

Third, none of the cited references disclose or suggest the step of calculating a set-value for the green liquor density based on the measured TTA of the green liquor, a target value for the TTA, and a model that correlates the measured TTA in the green liquor to green liquor density. The Examiner alleges that Baines teaches a process of using a computerized system to control the causticization reaction, and it would therefore be obvious to use the computerized process described in Baines. However, the Examiner's argument completely ignores the elements described above. It is improper for the Examiner to simply ignore these parameters, or to disregard them as being a routine optimization. The Examiner has provided no basis for ignoring these parameters.

The Examiner further asserts that the claimed process is an optimization of known processes. However, calculating the amount of white liquor to add to the green liquor based on a set-value for the green liquor density based on the measured TTA of the green liquor, a target value for the TTA, and a model that correlates the measured TTA in the green liquor to green liquor density would not have been obvious from the prior art of record. This is not a case of finding optimum values within a range of values taught by the prior art, which was the situation in *In re Boesch*. The Examiner has not shown that the prior art teaches adding white liquor to the green liquor-let alone, determining a set value for the green liquor density based on the above parameters.

From the foregoing remarks it is evident that the combination of the references failed to disclose or suggest several elements recited in the claims. Thus, the combination of Baines, Musow, and the '662 patent fail to disclose or suggest the claimed invention.

Establishing a *prime facie* case of obviousness based upon a combination of reference teachings also requires there to be some suggestion or motivation for the proposed combination or modification of reference teachings. The rejections fail this requirement in several respects.

First, the methods described in Baines and Musow are completely different processes for controlling the causticization reaction. Baines teaches controlling the amount of lime added to the slaker, whereas Musow teaches maintaining the sodium carbonate concentration at a desired concentration by adjusting the amount of weak wash solution that is added to the dissolving tank.

Second, the references themselves teach away from being combined as suggested by the Examiner. As noted in Applicants' previous response, Baines teaches away from using a single characteristic, such as TTA or density, in controlling the causticization reaction. In contrast, Musow teaches calculating the concentration of a single component to maintain a desired level of sodium carbonate within the dissolving tanke. Baines teaches control by measuring the individual components within both the green and white liquor. Thus, Baines teaches away from mensuring a single component as disclosed in Musow. Further, Musow states that conductivity measurements are superior to indirect measurements such as TTA measurements of the green liquor. By teaching that TTA measurements are inferior, Musow teaches away from the use of using TTA measurements of a green liquor for control purposes, and one of skill in the art would not be motivated to combine the TTA measurements of Musow with a control system such as the Baines system. Thus, one of ordinary skill in the art would not be motivated to combine Baines and Musow.

Finally, the rejection fails to provide the required expectation of success. Moreover, the person of ordinary skill in the art would perceive just the opposite-an expectation of failure. There is no reasonable expectation that a combination of Baines and Musow would permit control of the causticization process. As discussed previously, Baines teaches a control system that measures the individual components within both the green and white liquor to determine the amount of lime to add to the slaker. Baines further teaches that measuring a single component, such as sodium carbonate, may result in error. Musow teaches measuring the concentration of sodium carbonate to determine the amount of weak white wash to feed into the dissolving tank. Thus, it is entirely uncertain whether the control system described in Baines could use the sodium carbonate concentration of the green liquor as disclosed in Musow to control the causticization process. Therefore, one of ordinary skill in the art would not be motivated to combine the process described in Baines with the teachings of either the '662 patent or Musow.

Because there is no teaching or motivation, within the references or the art, to combine the disclosures of Baines, Musow, and the '662 patent, and even as combined the references fail to teach the claimed invention, the Office has failed to establish a *prima facie* case of obviousness and the pending rejections under 35 U.S.C. §103 should be withdrawn. As the rejections have been overcome for at least the reasons set forth above, it is respectfully submitted that all pending are in condition for immediate allowance and an early notification of the allowability of these claims is earnestly solicited. If any matters remain to be resolved, the Examiner is urged to contact the undersigned attorney by telephone at 704-444-1185 to expedite prosecution of this application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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I hereby certify that this paper is being facsimile transmitted to the U. S. Patent and Trademark Office at Fax No. (571) 273-8300 on the date shown below.

Timothy J. Balts — April 3, 2006
Date